41 lesions, 22 lesions were followed without treatment. Angiographic characteristics of septal channel perforation were Ellis class I (n=14), class II (n=2), and class IIICS (n=6). Septal channel perforation occurred in guidewire (n=13), balloon dilatation (n=8), and microcatheter (n=1). The angiographic follow up rate was 81.8% (class I: n=11, class II: n=2, and class IIICS: n=5). Persistent septal channel perforation disappeared at follow up angiography in all lesions.
Conclusions: Persistent septal channel perforation into the ventricle and coronary sinus or of non-spreading myocardial blush may have a good outcome.

TCT-78

Long-Term (4-Year) Clinical Outcomes of Total Occlusions and Completeness of Revascularisation in the Synergy between Percutaneous Coronary Intervention with Taxus and Cardiac Surgery Trial

Vasim Farooq[1], Patrick Serruys[2], Hector M. Garcia-Garcia[3], Yaojun Zhang[4], Christos Bourantas[4], Roberto Diletti[5], Michail Papafaklis[6], David Holmes Jr[7], Michael Mack[8], Ted Feldman[9], Marie-Claude Morice[10], Elisabeth Ståhle[11], Stefan James[12], Antonio Colombo[13], Ton de Vries[14], Marie Angèle Morel[14], Gerrit Anne Van Es[14], Friedrich Mohr[15], Keith Dawkins[16], A. Pieter Kappetein[17], Georgios Sianos[18]
[1]Thoraxcenter, Erasmus MC, Rotterdam, The Netherlands, [2]Professor Interventional Cardiology, Rotterdam, The Netherlands, [3]Thoraxcenter, Erasmus MC, N/A, [4]Thoraxcenter, Rotterdam, The Netherlands, [5]Thoraxcenter, Rotterdam, The Netherlands, Rotterdam, The Netherlands, [6]AHEPA University Hospital, Stilp. Kiriakidi 1, Thessaloniki, Greece, Thessaloniki, Thessaloniki, [7]Mayo Clinic College of Medicine, Rochester, USA, [8]Baylor Healthcare System, Plano, USA, [9]Evanston Hospital, Evanston, USA, [10]Institut Cardiovasculaire Paris Sud, Massy, France, [11]University Hospital Uppsala, Uppsala, Sweden, Uppsala, Uppsala, [12]Uppsala Clinical Research Center, Uppsala, Sweden, [13]EMO GVM Centro Cuore Columbus srl, Milan, Italy, [14]Cardialysis, Rotterdam, The Netherlands, [15]University of Leipzig, Leipzig, Germany, [16]Boston Scientific Corporation, Marlborough, MA, [17]Erasmus MC, Rotterdam, The Netherlands, [18]Aristotle University, Thessaloniki, Greece

Background: The impact of successful chronic total occlusion (TO) recanalisation and completeness of revascularisation after PCI on long-term survival remains unsettled.
Methods: Within the All-Comers SYNTAX Trial (n=2636), the PCI and CABG arms were stratified by the presence of TOs and complete (CR) vs. incomplete (ICR) revascularisation. Clinical outcomes (Kaplan-Meier) were analysed with log-rank and Cox regression analyses.
Results: In the randomised population, recanalisation/bypass rates of 49.4% (PCI) vs. 68.1% (CABG) were reported. In the All-Comers population, 840 patients (PCI: 26.3%, CABG: 36.4%, p<0.001) with 1007 TOs were identified. The presence of TOs was significantly associated with less CR by PCI (CR: TO 34.3%, non TO 59.8%, p<0.001) and CABG (CR: TO 64.8%, non TO 69.8%, p=0.048). The presence of a TO was the strongest independent predictor of ICR after PCI (Hazard Ratio [95% CI]: 2.85 [2.09, 3.87], p<0.001). Regardless of the presence of a TO in the PCI & CABG arms, CR (compared to ICR) was associated with significant reductions in 4-year mortality, all-cause revascularisation, and MACCE. Four-year stent thrombosis rates in the PCI arm were significantly lower with CR (3.7%) vs. ICR (6.5%, p=0.046), an effect that was more pronounced in the TO group.

Conclusions: Within the PCI and CABG arms of the All-Comers SYNTAX Trial – and specifically in all patients with TOs – whatever the acceptable threshold of revascularisation is appropriate for an individual patient, the identification of ICR (compared to CR) using the SYNTAX Trial definition identifies patients who have an adverse longer-term prognosis.

TCT-79

Chronic Total Occlusions in Sweden – Report from the Swedish Coronary Angiography and Angioplasty Registry (SCAAR)

Truls Råmunddal[1], Loes Hoebers[2], Christian Dworeck[3], Oskar Angerås[3], Dan Ioanes[3], Jacob Odenstedt[3], Risto Jussila[4], Ulf Jensen[5], Jan Harnek[6], Göran Olivecrona[7], Jan Tijssen[8], Jose Henriques[8], Mkael Aasa[4], Stefan James[9], Per Albertsson[3], Elmir Omerovic[3]
[1]Sahlgrenska University hospital, Gothenburg, Sweden, [2]Academic Medical Center, Amsterdam, Netherlands, [3]Sahlgrenska University Hospital, Gothenburg, Sweden, [4]Stockholm South General Hospital, Stockholm, Sweden, [5]Karolinska University hospital, Stockholm, Sweden, [6]Skane University Hospital, Lund, Lund, Sweden, [7]Skåne University Hospital, Lund, Sweden, [8]Academic Medical Center - University of Amsterdam, Amsterdam, Netherlands, [9]Uppsala Clinical Research Center, Uppsala, Sweden

Background: Interventions on chronic total occlusions (CTO) demand expert operator skills, longer procedural time and are more frequently associated with complications. Current guidelines for percutaneous coronary interventions (PCI) for CTO are based on small retrospective studies and expert consensus. Consequently, there is a necessity to strengthen such a recommendation with more evidence. The aim of this study was to report and describe prevalence, demographics, clinical characteristics, treatment decisions and trends in reporting on CTO at the level of one whole nation using data from the Swedish Coronary Angiography and Angioplasty Registry (SCAAR).
Methods: SCAAR contains data on all consecutive patients who undergoes coronary angiography or PCI in Sweden since 1989. Diagnosis of CTO in SCAAR is based on two variables. The first variable is PCI physician's mandatory evaluation of whether the treated occluded segment is more than three months old. The second variable is a non-mandatory reporting of lesions % stenosis in coronary artery segments.
Results: In January 2012, the SCAAR registry consisted of 497,572 procedures performed in 348,863 patients. In total, 29,571 patients with a CTO were identified. A CTO was observed in 10.9% of all performed procedures. In patients with significant coronary lesions, a CTO was seen in 15.9%. CTO patients had more cardiovascular risk factors and more extensive coronary artery disease. The majority of CTO patients were treated conservatively and PCI revascularization of CTO is performed only in 5.8% of all procedures. Revascularized CTO patients were younger and had more severe symptoms while CTO patients with diabetes and multivessel disease were more likely to be referred to CABG.
Conclusions: SCAAR is the largest data base of CTO patients to date. CTO is a frequent finding in patients undergoing coronary angiography in Sweden and the number of CTO procedures has been constant over the last 13 years. SCAAR may be a valuable source of relevant clinical data in the process of building the real world evidence for the guidelines regarding the optimal treatment of CTO patients.

TCT-80

Incidence of Periprocedual Myocardial Infarction in Chronic Total Occlusion PCI and Impact on Clinical Outcome

Tasuku Hasegawa[1], Cosmo Godino[1], Stefano Galaverna[1], Sandeep Basavarajaiah[1], Toru Naganuma[1], Masanori Kawaguchi[1], Massimo Slavich[1], Francesco Giannini[1], Alessandro Durante[1], Santo Ferrarello[1], Chiara Bernelli[1], Giacomo Viani[1], Gill Buchanan[1], Filippo Figini[1], Azeem Latib[1], Alaide Chieffo[1], Matteo Montorfano[1], Mauro Carlino[1], Antonio Colombo[2]
[1]San Raffaele Scientific Institute, Milan, Italy, [2]EMO GVM Centro Cuore Columbus srl, Milan, Italy

Background: Periprocedual myocardial infarction (PMI) in percutaneous coronary intervention was reported to associate with increased risk of death in long-term follow-up. However, there is a paucity of information about PMI in patients undergoing percutaneous coronary intervention for chronic total occlusion (CTO-PCI). In this study, we investigated incidence, predictors of PMI and prognostic impact after CTO-PCI.
Methods: We reviewed our CTO-PCI database and examined the incidence of PMI in patients who had attempted CTO recanalization between 2003 and 2009. PMI was defined as an increase of CK or CK-MB level more than three times higher than normal limit in measurement within 24 hours after index procedure. All cause mortality was estimated at 5 years (median: 2.5 years; interquartile range: 1.8 to 3.5 years) according to Kaplan-Meier analysis.
Results: Nine hundred and forty-five patients underwent CTO-PCI (mean age 63 +/− 10 years old; 89% male) were enrolled. Overall procedure success rate was 70%. PMI was observed in 53 (5.6%) of all patients and occurred more in failed patients than in successful patients (7.1% vs 5.0%, p=0.2). PMI patients had significantly less prior history of myocardial infarction and of PCI and less hypercholesterolemia. CTO lesions related to PMI were located less frequently in-stent and more in the contest of multivessel disease compared to lesions without PMI. At 5 years follow-up, patients with PMI showed significant higher rate of mortality compared to that without (29% vs 9 %, p=0.0006). At multivariate analysis, PMI (HR: 2.95, 95%CI: 1.27 to 6.02, p=0.014), age (HR: 1.09, 95%CI: 1.06 to 1.12, p<0.0001), chronic kidney disease (HR: 4.47, 95%CI: 2.38 to 8.10, p<0.0001) and left ventricular ejection fraction (HR 0.94, 95%CI: 0.92 to 0.96, p<0.0001) were significant predictors of all cause mortality.
Conclusions: In our registry, PMI was observed in 5.6% of CTO-PCI. PMI was an independent predictor of all cause mortality in long-term follow up. From these data, we don't determine if PMI is a marker of more advanced disease or a true causative factor.